

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE N/A	PAGE 1 OF 21 PAGES
2. AMENDMENT/MODIFICATION NO. 0005	3. EFFECTIVE DATE MAR. 14, 2002	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable) SPEC. NO. 1249	
6. ISSUED BY DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, SACRAMENTO SACRAMENTO, CALIFORNIA 95814-2922	CODE	7. ADMINISTERED BY (If other than Item 6) DISTRICT ENGINEER U.S. ARMY ENGINEER DISTRICT, SACRAMENTO 1325 J STREET SACRAMENTO, CALIFORNIA 95814-2922 ATTN: CONTRACTING DIVISION	CODE	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(√) 9A. AMENDMENT OF SOLICITATION NO. DACA05-02--R-0004
	X 9B. DATED (SEE ITEM 11) N/A
	10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A
	10B. DATED (SEE ITEM 13) N/A
CODE	FACILITY CODE

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☒ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

N/A

NOTE: ITEM 13 BELOW IS N/A.

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(√) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. N/A
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
D. OTHER (Specify type of modification and authority) N/A

**E. IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

FY02 REPLACEMENT ARMY FAMILY HOUSING  
WNR PP WEST/P1 (72 UNITS)  
Fort Huachuca, Arizona

**NOTE: The Receipt of Proposals Date has been changed to: April 17, 2002**

2 Encl.

1. Revised Pages: Frontend Pages (1,2,8,26,27,28,31,36,37 of 230),01010-2, 01010-3,01010-14, 01010-15, 1010-19, 01010-20, 01010-21, 01010-22, 01011-30
2. Revised Drawings: Master Plan Concept, Family Housing Site Layout "B"

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	

<b>SOLICITATION, OFFER, AND AWARD</b> (Construction, Alteration, or Repair)	1. SOLICITATION NO. DACA05-02-R-0004	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 22-Jan-2002	PAGE OF PAGES 1 OF 220

**IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.**

4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO.	
7. ISSUED BY DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, SACRAMENTO 1325 J STREET SACRAMENTO CA 95814-2922  TEL: (916) 557-5238 FAX: (916) 557-7842		CODE DACA05	8. ADDRESS OFFER TO (If Other Than Item 7) See Item 7 Attention: Contracting Division  TEL: FAX:		
9. FOR INFORMATION CALL:		A. NAME Mr. RICK VREDENBURG		B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) 916 557-5234	

### SOLICITATION

**NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".**

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

FY 02 Replacement Army Family Housing WNR PP West/P1 (72 Units) at Fort Huachuca, AZ Spec. No. 1249  
Whole neighborhood revival for jr. NCO's by replacement of 72 Capehart family quarters constructed (1958) to current stds. Construction consists of single &/or multi-unit, 1 & 2 story bldgs. Dwellings will be factory built/mfr'd houses &/or on-site constructed houses. The design incl. frame construction with stucco ext. finish. Each unit will be provided with 1 covered garage & 1 uncovered off-street parking spaces. Project will provide individual heating & AC units, hard wired interconnected smoke detectors, passive solar energy conservation features if cost effective, ext. storage, & all equip. & appliances for functional living units. Incl all required util. services with individual meters, storm drainage, info. (telephone & cable TV) systems roads, driveways, sidewalks, street lighting, landscaping, & recreational facilities. Asbestos & lead base paint abatement is required in the demo. process. At least (5%) of homes will be constructed such that they are accessible & easily modifiable to accommodate the requirements of the handicapped. Project will include demo. of 80 units.  
This is a design/build project. Estimated Cost Range: \$10,000,000 to \$25,000,000

11. The Contractor shall begin performance within 10 calendar days and complete it within 400 calendar days after receiving ☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. (See FAR 52.211-10.)

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT  
(If "YES," indicate within how many calendar days after award in Item 12B.)

☒ YES ☐ NO

12B. CALENDAR DAYS

10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8 by 15:00:00 (hour) local time 4/17/02 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- B. An offer guarantee ☒ is, ☐ is not required.
- C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- D. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

**SOLICITATION, OFFER, AND AWARD***(Construction, Alteration, or Repair)***OFFER (Must be fully completed by offeror)**14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*15. TELEPHONE NO. *(Include area code)*16. REMITTANCE ADDRESS *(Include only if different than Item 14)*

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within \_\_\_\_\_ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS

SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

**19. ACKNOWLEDGMENT OF AMENDMENTS***(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)*AMENDMENT  
NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO  
SIGN OFFER *(Type or print)*

20B. SIGNATURE

20C. OFFER DATE

**AWARD (To be completed by Government)**

21. ITEMS ACCEPTED:

**SEE SCHEDULE**

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN  
INIT *(4 copies unless otherwise specified)*

ITEM

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C. 2304(c)☐ 41 U.S.C. 253(c)26. ADMINISTERED  
DV

CODE

27. PAYMENT WILL BE MADE  
DV

CODE

**CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE**

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return \_\_\_\_\_ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)*

Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON  
TO SIGN *(Type or print)*31A. NAME OF CONTRACTING OFFICER *(Type or print)*

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA  
BY

31C. AWARD DATE

52.0215-4582 ALT I DIRECTIONS FOR SUBMITTING OFFERS (DEC 2001)

Envelopes/packages containing offers must be sealed, marked and addressed as follows:

MARK ENVELOPES/PACKAGES:

Solicitation No. DACA05-02-R-0004  
Closing Date: **APRIL 17, 2002**  
Closing Time: 3:00 PM PST(PDT)

ADDRESS ENVELOPES/PACKAGES TO:

Department of the Army  
U.S. Army Engineer District, Sacramento  
ATTN: Contracting Division  
1325 J Street  
Sacramento CA 95814-2922

SPECIAL INSTRUCTION PERTAINING TO HAND-CARRIED OFFERS:

Hand-carried offers must be delivered to: The Building Lobby at 1325 J Street, Sacramento, CA.

Due to security precautions, all Corps of Engineers visitors are now required to check in at the Security Desk in the Building Lobby and must be escorted within the building. Offerors are no longer permitted to hand-carry their offers directly to Contracting Division.

Offerors who desire to hand-deliver their offers at an earlier time must notify the contract specialist in advance in order to arrange to be met in the Building Lobby by Contracting Division personnel. In the event the contract specialist cannot be reached, please call the main Contracting Division telephone number, (916) 557-5201, in order to request assistance.

Please ensure that all courier and delivery personnel are aware of these

2.2.1 In order to effectively and equitably evaluate all offers, the Contracting Officer must receive information sufficiently detailed to clearly indicate the materials, equipment, methods, functions, and schedules proposed.

2.2.2 In addition to the design documents addressed above, offers must contain financial terms and schedules for design and construction, background information regarding the Offerors' qualifications, and the representations and certifications.

Specific requirements are described below.

2.3 SIZE OF PRINTED MATTER SUBMISSIONS:

- a. All written portions: 8-1/2" x 11" format
- b. All drawing sheets: 24" x 36" or 30" x 42" format. Full or half-size sets are acceptable, but must include a minimum of one (1) full-size set; half-size sets must be readable.

2.4 WHERE TO SUBMIT:

Offerors shall submit their proposal packages to the Corps of Engineers (COE) at the address shown in Block 8 of Standard Form 1442.

2.5 SUBMISSION DEADLINE:

Offers shall be received by the COE no later than the time and date specified in block 13 of Standard Form 1442. Note: Past performance information may be submitted separately in advance of the remainder of the offer as long as it is clearly marked and identified as such.

2.6 OFFER REQUIREMENTS AND SUBMISSION FORMAT:

2.6.1 The offers sought by this solicitation shall contain three categories of submittal information as follows:

2.6.1.1 Design-Technical: This information (FY02 Replacement WNR, PPW/P-1 (72 Units) FT Huachuca, AZ) shall be submitted in separate three-ring binders where appropriate and labeled "Design-Technical Information". This category (see Evaluation Factors 1-4) consists of design documents, drawings, calculations, specifications, catalog cuts, and other information. Provide **five (05)**~~ten (10)~~ copies of half-size drawings and a minimum of one (1) full-size set); and **five (05)**~~ten (10)~~ copies of catalog cuts and other technical data. The drawings shall be bound.

2.6.1.2 Offeror Performance Capability: This information (FY02 Replacement WNR, PPW/P-1 (72 Units) FT Huachuca, AZ) shall be submitted in three-ring binders, separate from the Design-Technical information, and labeled "Offeror Performance Capability." This category (see Evaluation Factor 5) consists of the Experience, Past Performance, and Capability information pertaining to the Offerors qualifications, including key personnel, past performance, and experience. This category also

consists of the Offerors planned utilization of small businesses (Factor 6). Provide **five (05)** ~~ten (10)~~ copies.

2.6.1.3 Price Proposal/Pro Forma Requirements: This information (FY02 Replacement WNR, PPW/P-1 (72 Units) FT Huachuca, AZ) should be submitted in an envelope, binder or box labeled "Price Proposal/Pro Forma Requirements." See Section 00120, Paragraph 3 for requirements. For example, this category consists of representations and certifications, pre-award survey data and a subcontracting plan (See Standard Form Sheets in ATTACHMENTS), an offer guarantee "bid bond", completed Standard Form 1442, and schedule of proposed prices. Provide original and three (3) copies.

2.6.2 The proposal shall also contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation, (such as company brochures and equipment lists), shall be relegated to appendices.

## 2.7 REQUIRED DATA FOR TECHNICAL PROPOSAL SUBMISSION:

2.7.1 The following technical data shall be submitted as part of the technical proposal. Technical proposals shall include a graphic description of the design clearly indicated as such. Offerors are advised that the required data listed below will be utilized for technical review and evaluation and used for determination of a "Quality Rating" by a Technical Evaluation Team. Materials indicated in the design/construction criteria but not indicated in the Offerors specifications will be assumed to be included and a part of the technical proposal.

2.7.1.1 DESIGN DOCUMENTS: This information is part of the requirements identified in paragraph 2.6.1.1. Drawings shall be drawn on 24 inch x 36 inch or 30" x 42" format. Provide an index of drawings. Submit one (1) full size and **five (05)** ~~six (6)~~ half-size copies. English Units shall be used for the drawing scale; however, metric equivalents (soft conversion) shall be placed in parentheses next to the English measurement for the final design (After Award) submittal. As a minimum, the drawings shall include:

2.7.1.1.1 Area Development/Site (Entire site for information FY02 Replacement WNR, PPW/P-1 (72 Units) FT Huachuca, AZ),

a. Overall Site Layout: Scale 1" = 80'\*

Show the following:

- Location of streets
- Driveways
- Parking
- Unit types with patios and fencing
- Recreation areas (Play Lot)
- Existing trees to remain
- Features to be retained or removed
- Project boundaries

- Solar orientation.
- Utility mains
- Existing and new topographical contours at intervals as shown on the RFP drawings
- Landscaping & Planting Schedule
- Walks/Pathways
- Overall Drainage

b. Demolition Plan: Scale 1" = 80'\*

Show the following:

- Existing building to be demolished
- Site demolition

c. Site Grading, Drainage, Erosion Control, and Utility Plan:  
Scale 1" = 80'\*

- Overall drainage
- Typical drainage
- Typical utility
- Erosion control elements

d. On-Site Electrical Plan: Scale 1" = 80'\*

Show the following:

- Site lighting (street and walkway)
- Primary cable routing (new and existing)
- Pad-mounted transformers & switches
- Secondary service laterals

**e. Conceptual Master Plan: Scale 1" = 80'\***

**Show the following:**

- **Future Master Plan for entire Pershing Plaza and Miles Manor housing.**
- **Location of streets**
- **Housing Units**
- **Recreation areas, play lot, & Community Bldg.**
- **Landscaping**
- **Walks/Pathways**

Note: Drawings shall be dimensioned to show building separations, setback, etc.

Scales marked with an asterisk are for the technical proposal only. Offeror has the option to use a larger scale; however, 1" = 40' scale is required for the final design submittal (after award) of these items.

2.7.1.1.2 Housing Unit:

a. Floor Plans: Scale 1/4" = 1'-0"

For each type of dwelling unit, show the following:

- Overall dimensions
- Room description with dimensions and areas
- Furniture layouts
- Vanities
- Appliances (including occupant-owned washer, dryer, and micro-wave oven; and contractor-furnished refrigerator, stove, and dishwasher)
- Plumbing fixtures
- Kitchen layout
- Door swings

2.7.1.3 Equipment Schedule: This information is part of the requirements identified in paragraph 2.6.1.1, Submit ten (10) copies:

2.7.1.3.1 Equipment schedule to indicate type of equipment, size or capacities, manufacture and model number.

2.7.1.3.2 Furnish manufacturer's catalog data on the following equipment and fixtures: doors (interior/exterior, including screen storm doors), windows, building hardware, appliances, HVAC equipment, lighting fixtures, kitchen/bath vanity and cabinets, sinks, lav, water closet, shower wainscot, roofing tile/shingles, playground equipment, VCT/sheet vinyl, architectural elements. Originals of manufacturer's catalog should be submitted in lieu of reproducible to ensure legible data.

2.7.1.4 Color Boards. Not applicable at Proposal Submittal. Required at 100% Design Submittal.

~~2.7.1.5 Calculations required for certification. This information is part of the requirements identified in paragraph 2.6.1.1. (Submit ten (10) copies). Net area and other calculations are required for certifications to assure that designs fall between the minimum and maximum net area limitations indicated in Section 01011, paragraph 2. Net area is also a factor evaluated for technical quality (such designs shall not exceed corresponding maximum net area limitation). Use the format provided in ATTACHMENTS (Note: gross square footage calculations are figured from the exterior side of walls. Only enclosed conditioned spaces are included in these calculations).~~

2.7.1.6 Offeror Performance Capability: This information is part of the requirements identified in paragraph 2.6.1.2. (Submit **five (05)** ~~ten (10)~~ copies) Offerors qualifications will be evaluated as part of this competitive negotiation procurement process. Offerors shall submit the following as part of their offers.

2.7.1.6.1 Project Examples (Experience). Provide not more than three examples of projects completed within the past three years which best demonstrate the Offerors team's capability of successfully complete this project. The examples should be as similar as possible, but not limited, to this solicitation in project type and scope. Provide references (with contract names and telephone numbers) for all examples cited. Each example shall indicate the general character, scope, location, cost, and date of completion of the project. Formats have been provided for submitting examples of design experience, construction experience, and design-build experience.

Project Examples (Past Performance) Submit information on recent contracts that you consider relevant in demonstrating your capability to perform the proposed effort, in accordance with the following instructions:

a. Identify all contracts, including Federal, State, local government and private/commercial for efforts similar to the Government requirement in scope, size and complexity which are either currently ongoing or which were completed within the



The SDB concerns considered in the evaluation will be listed in the contract, and the contractor shall be required to notify the contracting officer of any substitutions of firms that are not SDB concerns.

If authorized elsewhere in the solicitation, monetary incentives may be authorized for exceeding SDB subcontracting targets. The incentive, if elsewhere authorized, shall be paid only if an SDB subcontracting target was exceeded as a result of actual subcontract awards to SDBs, and not as a result of developmental assistance credit under the Pilot Mentor-Protégé Program. (See the clause at 52.219-26, Small Disadvantaged Business Participation program-Incentive Contracting, located in Section 00800.)

Submission Requirement:

Provide a narrative discussion that addresses the proposed participation in the performance of the work under the prospective contract of SDB concerns under the Authorized SIC Major Groups and for construction, by SDB concerns located in the Authorized Regions.

2.7.1.7 Pro-Forma requirements. This information is part of the requirements identified in paragraph 2.6.1.3. (Submit three (3) copies of the required documents) Offerors subcontracting plan will NOT be evaluated as part of this competitive negotiation procurement process; however, the submission of an acceptable subcontracting plan is required prior to contract award

SUMMARY OF OFFER SUBMISSION REQUIREMENTS		
SUBMITTAL	CONTENTS	NUMBER REQUIRED
PRICE PROPOSAL/ PRO-FORMA REQUIREMENTS	--SIGNED SF 1442 --PRICING SCHEDULE --ACKNOWLEDGEMENT OF ALL AMENDMENTS --REPRESENTATIONS AND CERTIFICATIONS --OFFER GUARANTEE ("BID BOND") --PRE-AWARD SURVEY --SUBCONTRACTING PLAN	ORIGINAL PLUS 3 COPIES
DESIGN-TECHNICAL INFORMATION	--OUTLINE SPECIFICATIONS <del>--CALCULATIONS</del> --EQUIPMENT SCHEDULE --CATALOG CUTS	<b>05</b> <del>10</del> SETS
DRAWINGS	--DRAWINGS	10 SETS (AT LEAST ONE SET MUST BE FULL-SIZE. THE OTHER SETS MUST BE AT LEAST HALF SIZE.)

OFFEROR PERFORMANCE CAPABILITY	--MANAGEMENT PLAN (QUALITY CONTROL, DESIGN/CONSTRUCTION SCHEDULE, CONTRACT CLOSE-OUT) --PROJECT EXAMPLES (NTE 3) --PAST CONTRACT INFORMATION --KEY PERSONNEL QUALIFICATIONS --SMALL BUSINESS UTILIZATION	<b>05 <del>10</del></b> SETS
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-End of Section-

## 1. DESIGN OBJECTIVES.

The design and construction shall comply with the specifications and requirements contained in this Request for Proposals (RFP). The design and technical criteria contained and cited in this RFP establish minimum standards for design and construction quality. All housing units constructed in accordance with these standards are "Energy Star Homes".

1.a. Work Scope. The objective of this solicitation is to obtain housing complete and adequate for assignment as quarters for military personnel and their families. This contract shall consist of the demolitions of ~~80~~ **88** housing units along with driveways, curbs, and sidewalks and the design and construction of a total of ~~72~~ **65** new housing units along with driveways, curbs, and sidewalks on Government-owned land at Fort Huachuca, Arizona, which comply with this RFP. **See paragraph 3.b. for Conceptual Master Plan.** Work shall consist of the following:

1.a.(1). New housing units. Housing units with one car attached garage, exterior storage, individual central heating systems, central air conditioning, and including the following Contractor-furnished/Contractor-installed (CF/CI) equipment and appliances: refrigerator, range and oven, range exhaust hood with fire extinguishing system, garbage disposer, dishwasher, water heater, carbon monoxide detectors, ceiling fans, whole house fan, and smoke detectors. Microwave oven, clothes washer/dryer, freezer, and shall be provided and installed by the Owner or tenant. Housing units shall be single story, either detached single family or duplex units. Housing units shall be three-bedroom and four-bedroom housing units as shown in Table 1-1:

**TABLE 1-1 - HOUSING UNITS**

Pay Grade	Number of Bedrooms	Number of Units
E-1 through E-6 (JNCO)	3	64 <b>58</b>
	4	8 <b>7</b>

1.a.(2). Accessible units. No less than ~~four (4)~~ **three (3)** of the 3-bedroom units shall be designed and built in such a way that they may be easily and readily modified to accommodate physically challenged occupants at time of occupancy. See Section 01011, paragraph 2.a.(2)(a). Design of accessible housing units shall conform to the Uniform Federal Accessibility Standards (UFAS) and American Disabilities Act Accessibility Guidelines (ADAAG). Accessible housing units shall be well dispersed throughout the development and shall not be grouped or clustered so as to create segregated pockets within the housing community. The housing units will be equipped with warning devices for the hearing and visually impaired and will be equipped for both gas and electric range hook-ups. The presentations shall clearly identify the location of the handicapped accessible units.

1.a.(3). Site area and density.

1.a.(3).(a). Site area. The site is described on the RFP drawings that are included as part of this solicitation, called the Pershing Plaza West site. **See the drawing titled "Existing Housing Site Layout For Master Plan Concept Pershing Plaza/Miles Manor". The eight family housing units north of Stedman St. and west of Burns St. are to also be demolished and this land can be used for new housing units even though topographic survey is not being provided for this area. The existing playground south of Stedman St. and west of Burns St. can also be used for new housing units.** Site work includes all design and construction of the site design to include grading, storm drainage, erosion control, pedestrian and vehicular circulation, utility systems, outdoor lighting, play lots, neighborhood parks, and physical security. **See paragraph 3.b. for Conceptual Master Plan for entire Pershing Plaza and Miles Manor, the conceptual, visionary design that is also part of the work.**

1.a.(3).(b). Site density. The project site is approved for LOW DENSITY siting. Site development shall comply with the minimum requirements for LOW DENSITY siting, except that the front of the housing unit may be set as close as 15' to the back of the curb at the

street.

1.a.(4). The Contractor shall be required to submit to the EPA the necessary information and certifications to register the units constructed in this project as Energy Star Homes. The Contractor will make arrangements with the EPA to receive two "Energy Star Homes" unit plaques. Coordination point with the EPA shall be as follows:

United States Environmental Protection Agency  
Climate Protection Division  
US EPA 6202J  
Washington DC 20460  
ENERGY STAR Homes Technical Coordinator  
ATTN: Mr Glenn T. Chinery  
<http://www.energystar.gov/homes>

1.a.(5). Not used.

1.a.(6). Demolition considerations and requirements. All material classified as ACM must be disposed in accordance with local, state, and Federal requirements. Not all landfills will accept non-friable ACM. Those that do must provide written permission.

1.a.(6).(a). Units that are to be demolished are a mix of one, two, and three bedroom units, all single story detached units with concrete masonry exterior walls. See Demolition Drawings for housing units, sidewalks, utilities, etc. that are to be demolished in this contract.

1.a.(6).(a)./1. Curbs and gutters, sidewalks, and driveways to garages shall be removed.

1.a.(6).(a)./2. Streets shall **can** remain at existing location and width. **However, new streets may be provided if a design different than is shown as existing is submitted by Contractor.** See Sheet C1.0 for milling and re-surfacing.

1.a.(6).(b). The Contractor is responsible for coordinating the utilities to insure that there is minimal disruption of power, telephone, and cable TV service to the surrounding areas. Any disruption of service shall be limited to normal daylight hours. Number and duration of service outages shall be scheduled so as to minimize disruption to surrounding areas and to family housing occupants. See Section 01505.

1.a.(6).(c). See Section 02080 for Asbestos and Lead-Based Paint Abatement requirements.

1.b. Design Freedom. Requirements stated in this RFP are minimums except where maximum sizes are identified for unit type and the housing unit net floor area. Innovative, creative, or cost-saving proposals which meet or exceed these requirements are encouraged and will receive quality points accordingly. Existing housing plans or modifications thereof that meet the design and construction criteria specified herein, which an offeror has previously constructed and priced, may be submitted. They may include designs incorporating factory fabricated components or modules. Deviations from space and adjacency requirements are discouraged unless the changes result in improvement to the facilities.

1.c. Housing Units. Site-built, factory-built, and manufactured-housing units are acceptable options for this project.

1.d. Definitions of Housing Unit Types. Terms for housing unit types used in these criteria are defined as follows:

### 3. SITE PLANNING AND DESIGN.

3.a. Scope. This project consists of 72 65 housing units on a single site of land. Imaginative site design is encouraged, however, the site boundaries, project composition, and gross density are fixed. Based on the graphic and narrative description of site opportunities and constraints provided, the offeror shall verify that the site meets the program requirements.

#### 3.b. Deleted Conceptual Master Plan:

*A supplement to this project involves providing a Conceptual Master Plan for the entire Pershing Plaza and Miles Manor housing area (see attached drawing "Existing Housing Site Layout for Master Plan Concept Pershing Plaza/Miles Manor" for existing layout). This combined housing area has approximately 800 units which are intended to be replaced with 625 new units. 88 of the existing units are being demolished and replaced with 65 new units in the present FY02 Replacement Army Family Housing project. The other 712 existing units will be demolished and the other 560 new units will be constructed in projects in the next couple of years.*

*The other 560 new units are presently intended to be JNCO-occupied 2, 3, and 4 bedroom units, in single-story detached single family units, single-story duplex units, and two-story duplex units.*

*An example of what is required is shown on the attached drawing labeled "Family Housing Site Layout "B".*

*The desirable aspects of this drawing are:*

- Clusters of housing units.
- Walking/jogging paths throughout the development.
- Well-placed tot lots.
- Variety of street forms that mostly avoid the parallel grid-like forms of the present FY03 site.
- Limited number of through-streets running north-south (suggested streets that may continue to run north-south are Stanley/Burns (already part of the requirements of the present FY02 project), Ruckers St., and Cushing Street East; these last two need not continue a straight lines but their entry/exit to/from the development are spaced about what would be expected. No housing units should face or enter directly onto the streets surrounding the development: Hatfield St., Irwin St., Carter St., Smith Ave., Arizona St., and that part of Burns St. on the perimeter.
- Club house/community building, tennis courts, basketball court, volleyball court, recreation field including baseball field

*The undesirable aspects of this drawing are:*

- Swimming pool: there will be no swimming pool.
- Housing density: prefer about 20% less dense than shown on the drawing.
- Repetitive housing types: prefer greater mix of different housing types with variation in setbacks and with less back-to-back units.
- Perimeter housing units: prefer less perimeter units.

*The present FY02 project bounded by Burns St., Stanley St., Smith Ave., and Arizona St. needs to be tied into the Conceptual Master Plan, although the Conceptual Master Plan may not necessarily be used in the future.*

3.c. Area Development/ Site Plan. Provide a housing area development plan that shows the spatial and functional arrangement of all housing requirements. The plan should ensure an economical, compatible and functional residential land use development that utilizes the advantages of the site, fosters visual order, and provides a sense of community. The area development plan shows consideration for the site opportunities and constraints, housing program requirements, and specific site design criteria and guidance provided.

3.c.(1). Density. The project site is approved for LOW DENSITY siting. Land area for density calculations excludes slopes greater than 10 percent, major highways, flood plains and flood areas, lakes and water courses. Designated major recreation areas greater than 1.2 ha [3 acres] may be excluded from the density calculation.

3.c.(2). Land use. The plan for the area should reflect an optimum balance of housing unit floor area, open space, play lots, neighborhood parks, and pedestrian and vehicular circulation. The plan should show an efficient, organized and economical land use arrangement that is compatible and functional. This plan should show the relationship of the area to adjacent land uses.

3.c.(3). Not used.

3.c.(4). Not used.

3.c.(5). Housing unit grouping. Variety in groupings, arrangements, and siting configurations of housing units is encouraged to fit varying terrain conditions and to provide compatible and functional residential layouts and street scapes. Building arrangements should be informal and imaginative with setbacks and orientation to provide for the best view, privacy, and variety. The proper grouping of housing units will provide backyard screening, separation of pedestrian and vehicular traffic, play lots, neighborhood parks, and natural open spaces. The layout should reflect simplicity of design and provide a visual sense of community.

3.c.(6). Housing unit variation. Housing unit variation shall afford distinctly different exterior appearances within each housing unit type. Provide stylistic compatibility that will give the neighborhood a sense of order. Housing units shall vary in two or more of the following: Floor plans, massing, elevation, and garage location. At a minimum, two different elevations for floor plan type of non-handicapped unit shall be provided (only one floor plan and elevation of the handicapped unit is required). In addition, housing units shall vary in color and siting. A reverse floor plan (mirror-image), although an acceptable means of creating variety, shall not constitute a housing unit change. Offerors shall comply with land-use restraints set forth in this document.

3.c.(7). Housing unit orientation. It is recognized that the existing streets are to *may* remain intact; however, housing units should be oriented, to the maximum extent possible, so that the long axis of the building is within 20 degrees east or west of true South, so that a major section of the roof faces within 20 degrees of South. The purpose of proper orientation is to expose a minimum surface area to direct solar gain. Deviations are appropriate only for the following: where sites to be used prevent proper orientation because of topographic constraints or existing street layout which is not to be changed.

3.c.(8). Grading. The grading should maintain existing topography while recognizing standard gradients for

the housing units and various functions. There should be a balance of the quantity of cut and fill which would create a smooth transition of graded areas into the existing site. The plan must reflect that existing trees shall be saved and protected where required in accordance with paragraph 3.h. (6).(b). Grading should manage site runoff. The principles of positive drainage should be applied to control the conditions that remove rainfall away from facilities and functions. There is an existing storm water conveyance system which conveys runoff through a subsurface storm drain system. Runoff from the project site needs to be directed to existing catch basins located in Hughes Street, Jeffords Street, and Stedman Street. The drainage system shall be in accordance with Section 01011, paragraph. 1.d.

3.d. Site Design Criteria. The following specific criteria, based on site density, are to be used as guidance in site design, and proposals will be scored accordingly.

3.d.(1). Housing units per hectare (ha) [acre (ac)] by site density are shown in Table 3-1.

**TABLE 3-1 - HOUSING UNITS PER HECTARE [ACRE]**

Pay Grade	Low Density	
	units/ha	units/ac
E-1 - E-6	7.4-12.4	3-5

3.d.(2). Housing unit types by site density are shown in Table 3-2.

**TABLE 3-2 - HOUSING UNIT TYPES BY DENSITY**

Bedrooms/ Grade	Low Density
3 & 4 E-1 - E-9	Single Story Detached Houses Or Duplexes

3.d.(3). Parking requirements by site density.

3.d.(3).(a). Low density: Two off-street spaces (which includes one in the garage) per unit.

3.d.(4). Children's outdoor play areas. See paragraph 3.g. for size and equipment specifications.

3.d.(4).(a). Play lot: One 325 m<sup>2</sup> [3,500 ft<sup>2</sup>] play lot is required. The play lot shall be designed to accommodate two age groups; 6 weeks to 5 years age group and 5 to 9 years age group. The play lot shall have a capacity for approximately 15 to 35 children. ~~This play lot shall be located at the same location as the existing play lot in the site.~~

3.e. Building Setbacks and Spacing. Clearances between and adjacent to buildings must consider requirements for fire protection, safety, privacy, and emergency access in addition to the following minimum criteria. Setback or yard dimensions shall be from the building wall to an imaginary lot line around each building measured perpendicular to the building. Wall lengths with horizontal offsets of 1.8 m [6 ft] or more may be measured separately when determining yard depth. Distance between buildings shall be not less than the sum of setbacks or yards, as required.

3.e.(1). Minimum setbacks and spacing for low density sites is shown in Table 3-4.

3.g.(2).(a). Manufactured play equipment setting. This setting includes an age appropriate composite structure consisting of multiple play events for each of the following age groups; 2 to 5 years of age, and 5 to 12 years of age. Other play events include free standing equipment such as spring rocking equipment, swing, and balance beam. The swing should be located as a free standing play event on the perimeter.

3.g.(2) (b). Basketball Court. Basketball court shall be **removed. New asphalt half court basketball court with hoop and netting shall be provided.** ~~re-surfaced. New netting shall be provided for the existing two basketball hoops.~~

3.h. Landscape Planting Plan. Ft. Huachuca has indicated that no new landscaping shall be provided other than hydroseed at individual units and at erosion control areas and other than new landscaping at children's outdoor play area. No minimum quantity of trees or shrubs is being suggested. Emphasis should be put on integrating the housing units with existing trees (where applicable) and with existing contours without an abundance of cut and fill. The landscape design focus shall be to provide an environmentally compatible and aesthetic desert-scape design that creates functional, low maintenance, and low water use environments within the family housing project. Special consideration shall be given to the use landscape architecture to create a neighborhood identity. The arrangement of the landscape architectural elements, plants, and materials shall address the functional needs of the users such as providing shade, noise attention and mitigation of negative environmental conditions (such as wind, solar heat, negative views, roadway traffic, etc. Project landscape improvements will be focused on three areas:

3.h.(1). Children's Outdoor Play Area: See para. 3.d.(4)(a) Play Lot.

3.h.(2). Greenbelt Connections: Greenbelt walkways and corridors connecting neighborhoods and play lots together shall be designed and landscaped utilizing shade trees and desertscape materials to harmonize neighborhoods together.

3.h.(3). Residential Unit Landscape: All project residential units shall be landscaped and hydroseed in side yards including corner lots, and rear yard turf areas **centrally irrigated in front yards, side yards including corner lots, and rear yard turf areas. Each unit rear yard shall have minimal turf areas only.** New Fort Huachuca standards determine that new landscape shall be of a low water use and low maintenance design incorporating xeriscape and desertscape concepts. Harmony and identity of these new neighborhoods shall be the design goal. Contractor shall establish all landscaping and hydroseeded **turf** areas and ensure that grass lives and is watered and cut for a period of at least 60 days as needed before and until final acceptance by Contracting Officer and Fort Huachuca DIS.

3.h.(3).(a). Definitions of Residential Unit Landscape Limits: All street facing and between building land shall be landscaped. General guidelines are as follows:

3.h.(3).(a).1/. Front Yard landscape area includes all land area from front of building footprint to back of curb or monolithic sidewalk.

3.h.(3).(a).2/. Side Yard landscape areas includes all land area located between residential units from back of curb or monolithic sidewalk to rear corners of units' footprints.

3.h.(3).(a).3/. Corner Lot Side Yard landscape areas includes all land areas located from side of unit footprint corners and back of curb or monolithic sidewalk.

3.h.(3).(a).4/. Rear Yard and Common Areas are defined as all lands from rear footprint of units to another rear of unit, project boundary, or street.

3.h.(3).(b). Landscaping shall be done primarily with desert-type or desert tolerant plants and materials that are adapted to the Fort Huachuca project environment and have low maintenance and water requirements. Plant species chosen shall be from existing plant success field observations and

suggested Fort Huachuca plant list (See Attachments). Neither trees nor bushes shall be fruit-bearing nor shall they have thorns (e.g., thorn-type mesquite, pomegranates, cactus and Desert Spoon are not allowed).

**3.h.(3).(b).1/. Provide 51 mm [2 inch] minimum cover of crushed rock mulch with desert type landscaping between roadways and housing units, and along the front, sides (including corner lots) and backs of all units to provide an informal flowing edge roughly 6096 mm [20 feet] minimum from any building structure or backyard fence line.**

**3.h.(3).(b).2/. All rear yards and common areas, where not landscaped, shall be rock mulched as specified under hardscape. Trees and shrubs shall not be planted within .6 m (2 ft) either side of an assumed property line between the duplexes on the side, and at the rear of the yard where tenants may erect fences in the future. Each rear yard shall have a concrete patio and shall be provided with a minimum of 140 square meters [1500 square feet maximum] of sodded turf area. All turf areas not boarded by concrete shall have a black plastic bend-a-board garden header edge with steel stakes. All edges shall be straight and continuous lines or curves.**

3.h.(3).(c). Hardscape:

3.h.(3).(c).1/. River rock shall be used for drainage swale areas in the landscape and serve in focal areas. River rock shall be utilized as energy dissipators to direct rainwater away from housing units where required. River rock shall be earth tone 50 mm to 200 mm [2 to 8 inch] in size, water smoothed.

3.h.(3).(c).2/. Boulders shall be utilized as accent focal points within the tot lot(s) and general landscape areas. Minimum sizes shall be 600 mm x 600 mm x 900 mm [2'x2'x3'] and be a red sandstone color, but not actually sandstone. Sample to be approved by the Contracting Officer. **Minimum three (3) boulders per house.**

3.h.(3).(c).3/. ~~Natural drainage will be dispersed and connected with existing use of ground sculpting, berms and swales and will be used to direct drainage and minimize erosion. No gunite or similarly emplaced concrete or concrete like materials may be used for erosion control. Riprap may not be used unless held in place with the use of gabions or other anchored wire mesh. Drainage will have grassed established to 70% coverage prior to the rainy season.~~ **Hardscape shall consist of 50 mm [two inch] minimum cover of rock mulch with 9 mm to 12.5 mm [3/8" to 2"] in diameter over a commercial geotextile/weed fabric. The rock mulch shall be red crushed granite, matched in texture and color to the existing FT Huachuca DIS and Contracting Officer (samples shall be submitted to Contracting Officer for approval).**

3.h.(3).(c).4/. Geotextile Fabric shall be a non-woven polypropylene material spun-bonded, water permeable, non-brittle, weigh a minimum of 126 grams per square meter [4 ounces per square yard]. Joints shall be overlapped minimum of 150 mm (6 inches). All edges shall be heeled into natural grade and anchored as necessary.

3.h.(3).(d). Sidewalks shall be installed in areas where foot traffic is anticipated or high disturbance is anticipated, i.e. near schools.

3.h.(4). All landscape areas are to be designed and circuited into hydro zones as per plant water and microclimate requirements.

3.h.(5). Vandalism is a real and constant maintenance problem and challenge. Landscape and site **and irrigation** design and installation implementation details shall address and provide for vandal resistance.

3.h.(6). Planting Density: Planting densities and groupings shall be furnished in enough numbers to provide adequate shade, wind, and aesthetic coverage.

3.h.(6).(a). Neighborhood Identity: Planting design shall place emphasis on creating neighborhood identity.

3.h.(6).(b). Existing Trees: Existing trees are mature and shall be complemented with additional tree plantings to enhance identity of streets and neighborhoods. Existing trees should be saved where possible. FT Huachuca prefers that some existing mature trees remain to lend a more natural landscape, scale of new housing and community and historic elements the neighborhood. Ash trees along Jeffords and Cooney are to be saved if they do not interfere with new construction.

3.h.(7). Plant Material: Plant material sizes for plantings shall be as follows:

3.h.(7).(a). Trees shall be 100%- 57 L [15 gallon]. Larger box specimen trees shall be integrated into the tot lot design. All trees are to be double staked.



3.h.(7).(b). Shrubs to be 60%- 19 L [5 gallon] and 40%- 3.8 L [1 gallon] containers.

3.h.(7).(c). ~~Turf areas shall be hydroseeded with dwarf tall fescue hybrid variety (cool weather) or hybrid bermuda (warm weather). Coordinate with User.~~ **Turf areas shall be sodded with dwarf tall hybrid variety turf. Provide 1 year warranty on all new trees and 6 month warranty on all shrubs and turf.**

3.h.(8). Weed Control: Provide pre/post emergent control for weeds and grasses prior to desert landscaping installation.

**3.h.(9). Irrigation: Common areas only shall be automatically irrigated through a new common irrigation system (individual family unit yards will not be irrigated). Points of connections to water main lines shall be determined in field for ease of access and low visibility.**

**3.h.(9).(a). The irrigation system shall be of current industry standards for a water conservative, low maintenance design. The use of drip and/or bubbler irrigation for trees, shrubs and ground covers is required in all non-turfed areas. The use of low gallonage spray or gear driven type irrigation coverage is required for all turf areas. System valves shall be self-draining.**

**3.h.(9).(b). Selection of equipment and design of irrigation system shall address low-water usage, ease of maintenance, and vandal resistance.**

**3.h.(9).(b).1/ All controllers and backflow prevention units shall be installed with concrete pads and commercial heavy-duty lockable steel enclosures. Painted in color approved by Contracting Officer. Locations shall be in easy accessible, but inconspicuous, and approved by Contracting Officer.**

**3.h.(9).(b).2/ All control valves and gate valves shall be installed with concrete pads and in lockable valve boxes. Heavy duty locks with keys shall be provided.**

**3.h.(9).(b).3/ Quick Coupler valves (2-piece, 12.5 mm [2 inch]) shall be located in the tot lot complex.**

**3.h.(9).(c). Sleeving: Sleeving is required for all crossing of pavement areas with vehicular traffic. All driveways shall have a minimum of a 75 mm [3 inch] sleeve located near back of curb or walk. Street crossings shall be minimized and determined in field. 2- 100 mm [4"] sleeves per street crossing is required. A minimum one sleeve shall be provided crossing driveway within 1500 mm [5 feet] from the building.**

**3.h.(9).(d). All landscape areas are to be designed and circuited into hydro zones as per plant water and microclimate requirements.**

**3.h.(9).(e). Materials, equipment, and methods of installation shall comply with the following codes and standards: American Society for Testing and Materials (ASTM), National Sanitation Foundation (NSF).**

#### **4. SUSTAINABLE DESIGN CONSIDERATIONS:**

4.a. Sustainable Design techniques shall be considered as they relate to site design, site engineering, unit design, and unit engineering. Techniques which conserve energy, improve livability, and can be justified by life cycle cost analysis as cost effective are encouraged. Integration of energy conservation systems with the housing unit's design (lighting, structure, mechanical systems, and aesthetics) is essential to facilitate livability and maximum energy savings. The following paragraphs define the goals and general objectives for inclusion of Sustainable Design Considerations in this project. This information is taken from US Army Corps of Engineers, ETL 1110-3-491. The listing is not all inclusive, and the techniques suggested may not be cost effective at a given location or site. Additional consideration in the technical evaluation will be given to designs which incorporate and identify Sustainable Design techniques included in the proposal.

##### **4.b. Goals and Objectives of Sustainable Design.**

4.b.(1). The overall USACE goal of Sustainable Design is to be environmentally responsible in the delivery of facilities. The key traditional elements for decision making in the facility delivery process are cost, quality and time. These elements need to be expanded to include the ecological and human health impacts of all decisions.

4.b.(2). Each project generates its own set of goals. However, sustainable design goals should apply to all projects. The goals for improving the environmental performance of facilities include: (a) use resources efficiently and minimize raw material resource consumption, including energy, water, land and materials, both during the construction process and throughout the life of the facility, (b) maximize resource reuse, while maintaining financial

stewardship, (c) move away from fossil fuels towards renewable energy sources, (d) create a healthy and productive work environment for all who use the facility, (e) build facilities of long-term value, and (f) protect and, where appropriate, restore the natural environment.

4.c. Sustainable Design and Construction of the Built Environment. Design and construction of sustainable buildings should be in accordance with the following concepts:

4.c.(1). Site Work and Planning--Environmentally sensitive planning looks beyond the boundary of the project site to evaluate linkages to transportation and infrastructure, ecosystems and wildlife habitat and community identification. Site planning evaluates solar and wind orientation, local microclimate, drainage patterns, utilities and existing site features to develop optimal siting and appropriate low maintenance landscape plant material;

4.c.(2). Building Layout and Design--Optimize building size, and maintain an appropriate building scale for the environment and context of the building or a building component. Layout the rooms of a building for energy performance and comfort, and design for standard sizes to minimize material waste. Pay careful attention to the location of exterior windows. Avoid structural over-design and the resultant waste. Design components of the built environment for durability and ease of adaptation to other uses, and for waste recycling.

4.c.(3). Energy--Building orientation and massing, natural ventilation, day-lighting, shading and other passive strategies, can all lower a building's energy demand and increase the quality of the interior environment and the comfort and productivity of occupants;

4.c.(4). Building Materials--Environmentally preferable building materials are durable and low maintenance. Within the parameters of performance, cost, aesthetics and availability, careful selection and specification can limit impacts on the environment and occupant health;

4.c.(5). Indoor Air Quality--Indoor air quality is most effectively controlled through close coordination of architecture, interiors and MEP design strategies that limit sources of contamination before they enter the building. Construction procedures for IAQ and post-occupancy user guides also contribute to good long-term IAQ;

4.c.(6). Water--Site design strategies that maximize natural filtration of rainwater and consideration. Water conservation is enhanced by low flow plumbing fixtures, water appropriate landscaping and HVAC and plumbing system design;

4.c.(7). Recycling and Waste Management--Waste and inefficiency can be limited during construction by sorting and recycling demolition and construction waste, reuse of on-site materials and monitoring of material use and packaging. Accommodating recycling into building design reduces waste while generating revenues, and;

4.c.(8). Building Commissioning, Operations and Management--Effective building commissioning is essential to ensure proper and efficient functioning of systems. Facilities operations benefit from the monitoring of indoor air quality and energy and water saving practices, waste reduction and environmentally sensitive maintenance and procurement policies.

#### 4. UNIT DESIGN - THERMAL PERFORMANCE.

4.a. Thermal Characteristics. See Table 4-1 for identification of appropriate weather region. Housing unit construction shall provide at least the minimum R values / maximum U values indicated in Table 4-2 for the appropriate weather region. R and U values shall be calculated in accordance with ASHRAE methods.

**TABLE 4-1 - WEATHER REGION DEFINITIONS<sup>1</sup>**

Weather Region	Cooling Degree Days	Heating Degree Days	
	Range Base = 18 degree C [65 degree F]		
8 <sup>3</sup>	< 1,111 [2,000]	> 1,111 [2,000]	< or = to 2,222 [4,000]
The average - The average Cooling Degree Days are 870 [1,556]. The average Heating Degree Days are 1394 [2,510].			

**TABLE 4-2 - THERMAL CHARACTERISTIC REQUIREMENTS<sup>1,2</sup>**

Weather Region	Wall <sup>3</sup> R Value	Ceiling /Roof R Value <sup>4</sup>	Crawl Space R Value <sup>5</sup>	Basement R Value <sup>6</sup>	Slab on Grade R Value <sup>7</sup>	Door U Value <sup>8</sup>	Glazed Openings U Value <sup>9</sup>	
							Window	Door
8	2.6 [15]	6.7 [38]	Not Applicable	Not Applicable	<b>None</b> 1.8 [10]	0.41 [0.07]/2 .5 [0.43]	2.2 [0.38]	2.0 [0.35]

**Note<sup>1</sup>:** Metric R values are in square meter-kelvin (K)/watt. [English R values are bracketed, and are in square foot-degrees F/BTUH]. ( $R = 1 / U$ )

**Note<sup>2</sup>:** R values listed represent the minimum acceptable insulation values for each construction type. Listed U values represent the maximum thermal conductance allowed for windows and doors. Listed values do not include allowance for surface air films.

**Note<sup>3</sup>:** Requirements for opaque, exterior walls.

**Note<sup>4</sup>:** For buildings with ventilated attics, no credit may be taken for the roof construction. R value shall be computed for construction between conditioned space and ventilated attic or building exterior. Insulation for floors which extend over outside air spaces shall conform to the ceiling and roof requirements.

**Note<sup>5</sup>:** Not Applicable

**Note<sup>6</sup>:** Not Applicable

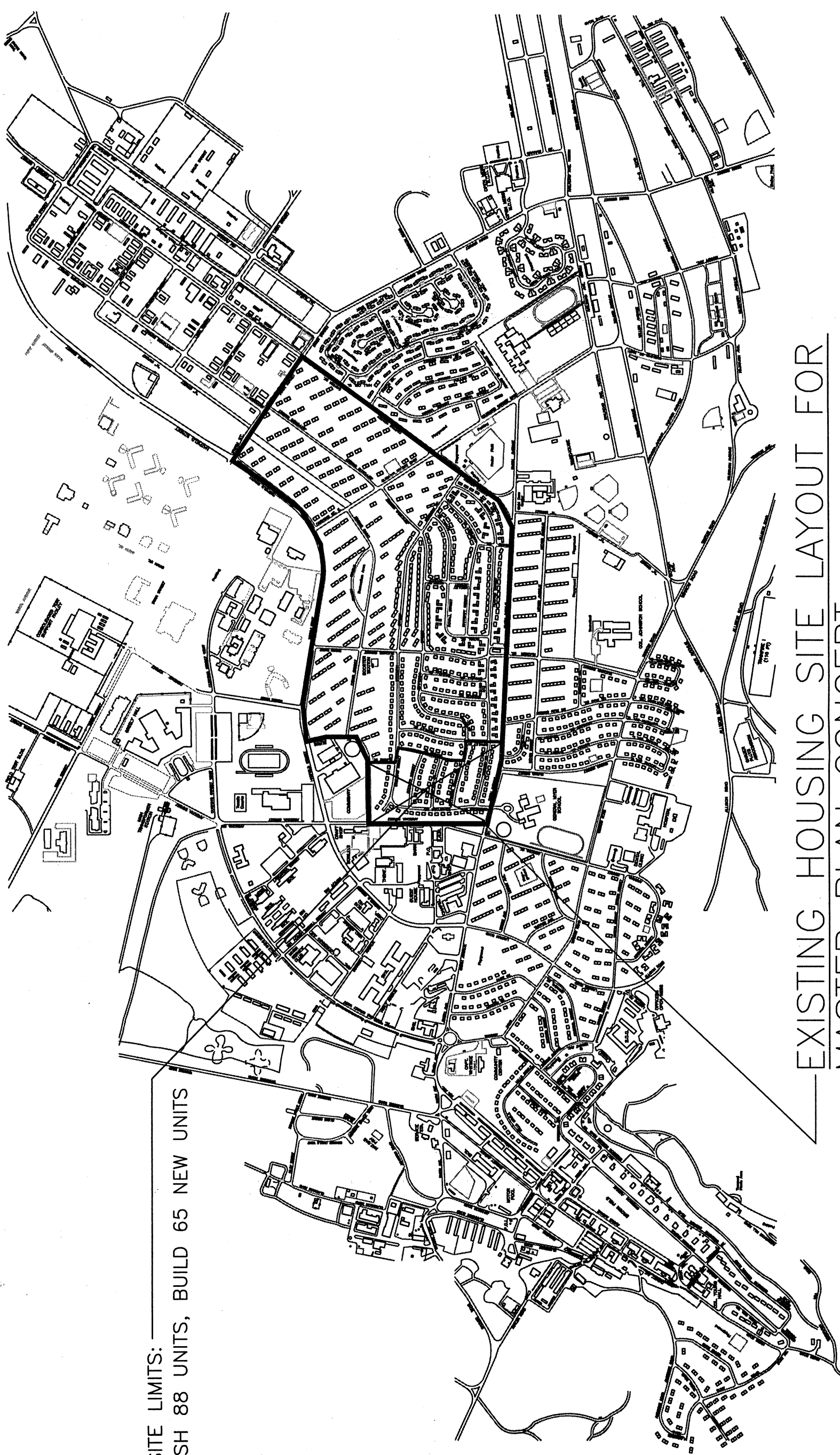
**Note<sup>7</sup>:** Requirements for perimeter insulation (to be located on exterior of foundation). In Weather Regions 7 through 11, perimeter insulation shall extend downward to the bottom of the footing. Perimeter insulation shall be protected at grade.

**Note<sup>8</sup>:** Requirements for opaque doors in exterior walls (insulated metal and wood core).

**Note<sup>9</sup>:** Whole window requirements for double pane, low emissivity glass windows as specified in paragraph 2.m. of this Section. Glazed openings shall have U values rated by the National Fenestration Rating Council (NFRC). Glazing area in Weather Region 8 shall be limited to 14 percent of the heated floor space.

#### 4.b. Thermal Insulation.

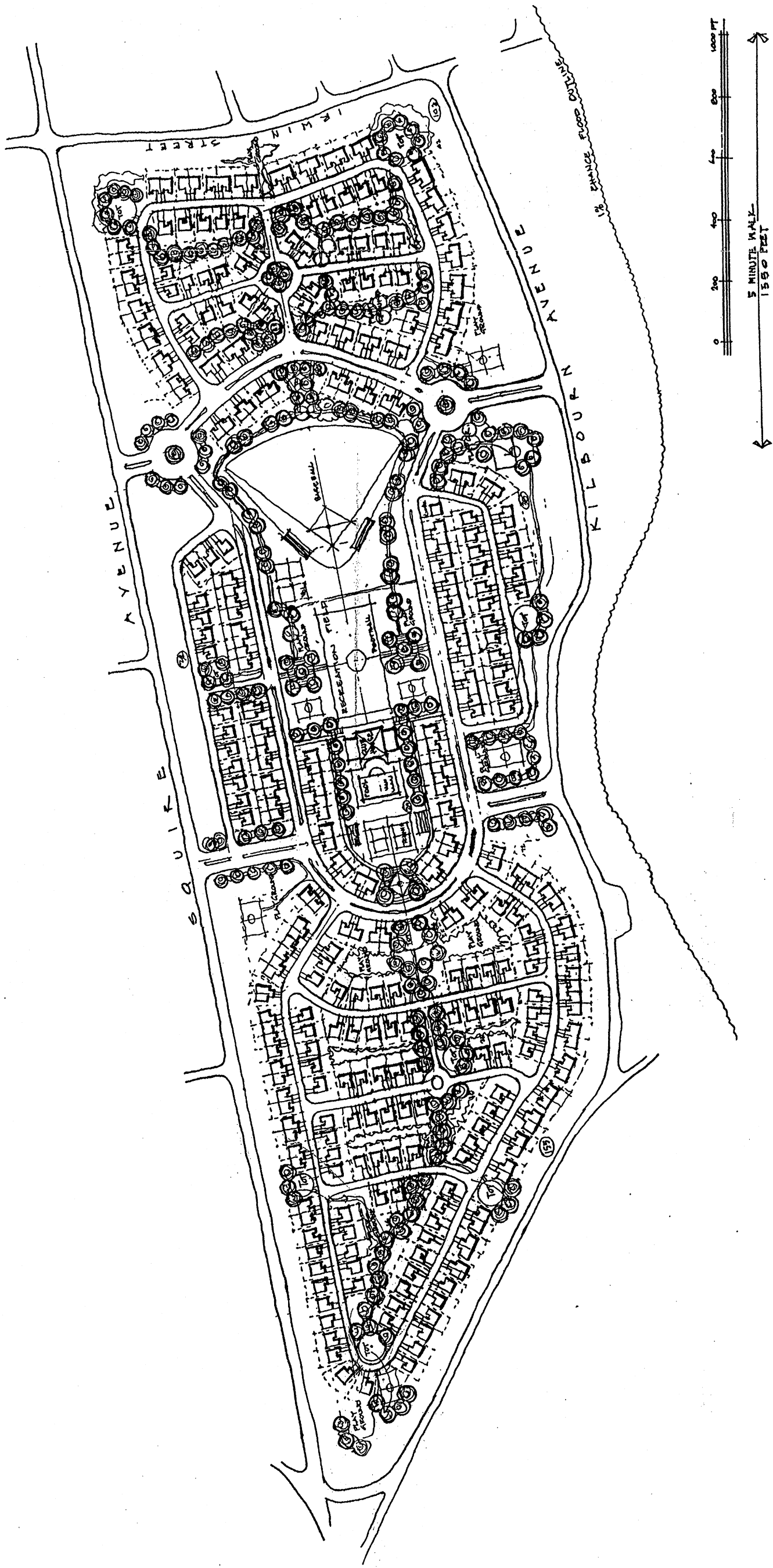
4.b.(1). Characteristics. Thermal insulation shall have a flame-spread rating of 25 or less and a smoke-development rating of 50 or less, exclusive of the vapor barrier, when tested in accordance with ASTM E84. A vapor barrier shall be provided on the warm-in-winter side of exterior wall and ceiling



FY02 SITE LIMITS:  
DEMOLISH 88 UNITS, BUILD 65 NEW UNITS

EXISTING HOUSING SITE LAYOUT FOR  
MASTER PLAN CONCEPT  
PERSHING PLAZA/MILES MANOR

OVERALL REPLACEMENT OF APPROXIMATELY 800 EXISTING UNITS WITH 625 NEW UNITS



**FAMILY HOUSING SITE LAYOUT 'B'**